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Investigating risk-return relationship: An empirical study in Iraq stock market

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ABSTRACT

The objective of the current research is to detect the correlation between risk and return as there are inconclusive results regarding this issue. The study used the daily closing prices of six banks from Iraq Stock Exchange (ISE) over the period 1st Jan 2015 to 31 Dec 2017. The paper employed both symmetric and asymmetric models of different properties of "the Generalized Autoregressive Conditional Heteroscedastic (GARCH)". Findings obtained by the study could not give proof of the presence of a positive risk premium in the marketplace. Furthermore, the asymmetric model of the Exponential Generalized Autoregressive Conditional Heteroscedastic (EGARCH) showed asymmetry in stock returns which refers to the occurrence of power impact in the takings sequences. However, the results indicated that the good news is more destabilizing than bad news in ISE.

Keywords: Risk, Stock Returns, Stock Markets, Volatility, GARCH. JEL Classification: G11, G32, G170, C58

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1. Introduction

The fluctuation movements in the daily prices of the financial assets can be considered as one of the volatile nature of the financial markets. In order to cope with the usual fluctuated movements in the price, investors use their funds in the financial markets and expect offset by a risk premium. Risk or "volatility" can be defined in general as the variations in the return generated by the stock or stock indices due to the changes in the daily price. The standard deviation or variance is used to measure the risk. The usual fluctuations of the stock prices can be bad if they are unusually very sharp in very short periods of time as it may result in difficult financial planning[1, 2]. If the financial markets' performance is significantly unstable, investors cannot predict the future reliably which results in more uncertainty about future stock price movements. In the markets which are capital, it could be very tough for investors to secure in volatile markets. So, uncertainty may affect a very critical factor in stock trading; investor confidence, especially in investment and financing decisions. The uncertainty may also generate excessive volatility which may result in severe smashes or critical turbulence in the markets. Thus, it is essential to perform a more precise estimation of volatility to manage risk. Investors in the financial markets are concerned about the volatility of the financial asset prices, as high volatility in the daily stock price fluctuations means to them heavy losses or huge gains and, then greater uncertainty. So, it is important to select the right volatility models that can estimate reliably the volatility of the monetary time sequences accurately[3-5]. Traditionally, the Capital Asset Pricing Model (CAPM) has had a significant contribution to the management of the investment. CAPM is useful as well as frequently used financial economic theory in terms of many aspects. The theory of CAPM premises on the concept of the 'risk-return trade-off'. This concept proposes that investors request progressively higher returns as compensation for the consecutive increase in the risk. Theoretically, return and risk play crucial roles in the CAPM. It has been implied by asset pricing models that a positive association between risk and return if a risk aversion is assumed. According to Markowitz who introduced the Modern Portfolio Theory (MPT), the mean-variance efficient portfolios are held by the investors.

As such, for the rational investor who is considered to be risk-averse, a decision situation of two portfolios that profit equal rate of return, one of the lower risks would be selected. Similarly, the portfolio with a higher return is more likely to be selected than the portfolio of low return if both were to carry the same level of risk. The CAPM claims that the expected rate of return for the financial asset is affected by the systemic risk which is an undiversifiable part of the total risk[6, 7]. The expression of CAPM is:

$$ri = rRF + [(rM) - rRF]bi. \quad (1)$$

where ri is the required rate of return on the *i*th stock, rRF is the risk-free rate of return, rM is the required rate of return on the market portfolio and bi is the beta coefficient of the *i*th stock.

The part [(rM) – rRF] represents the risk premium. A beta coefficient tells the extent of the systemic risk of a particular asset relative to an average asset. The model (1) expresses a positive linear correlation between the systematic risk and the expected return as the higher return is expected for higher risk (Corrado & Jordan, 2005). The expression is ri = rRF + [(rM) – rRF]bi holds a measurement problem because it is relied on the *ex-ante* representation. So, to overcome this limitation, the amended version of the expression was based on the *ex-post* representation was suggested under the assumption that the stock markets are efficient and the rate of the revenue on a monetary asset is a fair game. The expression is defined as:

$$rit = rFt + [(rMt) - rFt]bi + uit \quad (2)$$

where the error term *uit* is interpreted as white noise. This model (2) solves the measurement problem as the stock rate of returns is measurable by considering the logarithmic price difference. Such data was supported by several studies such as Black and colleagues[8]. They showed evidence that there is a positive association among Beta returns and average stock returns represented by the CAPM for long periods up to the late 1960s. Although the validity of the CAPM has been continuously tested and evaluated by some researchers, some other researchers have assumed that it may be associated with confusing data due to the intrinsic obstacles regarding the CAPM that make it inherently un-testable So, Although the risk-return trade-off and the theoretical attractiveness of Merton's suggestion are important, from practical point of view the asset pricing literature has not achieved any definite approve to the presence regarding positive threat-return relationship in the stock marketplaces[9-11]. On other hand, researchers such as Campbell concluded that there is a negative correlation in the U.S. data. Hence, data from different markets/different countries were used in practical studies conducted to test the threat-return relationship. Nevertheless, the results were rogue and the studies applied did not take into consideration any evidence supporting this relationship over time Up to this time, the validity of the model is criticized as it presumes that β is constant over time while the error term is expected to follow a normal distribution, identical, homoscedastic and serially independent. But these assumptions are disproved because the coefficient β was found to be time-varying. Not surprisingly, the unconditional expression of the CAPM has been widely criticized. It is common to observe the volatility, clustering, and leptokurtosis in the financial time series. Leverage effects are also considered in the stock rate of returns which is observed when there is a negative association between the change in-stock rate of returns and the changes in volatility. Hence, the volatility of stock returns was estimated in the financial time-series analysts by using varying-variance model. According to a study published by Robert F. in 1982 discussing the U.K. inflation rates, by measuring their time-varying volatility, Engle suggested a model called Autoregressive Conditional Heteroscedasticity (ARCH)[12, 13]. ARCH model is based on the idea that to update a variance estimation is to average it with the variance of the rate of return from its mean. Nowadays, the generalized autoregressive conditional heteroscedasticity (GARCH) model is the furthermost commonly employed model to predict the conditional variance of the rate of returns for stocks and financial market indices. This method was also pioneered by Engle[14, 15]. The heteroscedastic nature of the stock returns means that the ARCH methodology is a natural candidate for its modeling. Nonetheless, many studies in this field are conducted in the multivariate context, since the instability of the stock markets fluctuates over time and across different financial markets and assets. Additionally, the multi-varying models estimate efficiently the dynamic cross-ties that may be present between the stock returns, which is a pivotal factor in calculating the gains from portfolio diversification[16]. Over time, many studies suggested numerous and diverse models forecast volatility, ranging from time-series based volatility models to option market implied volatility models such as ARMA, EWMA, ARCH, GARCH. In addition, the empirical performances of these models were tested by many studies and for many local and international financial markets. So, this study will investigate very popular models from the GARCH family: the GARCH-in-mean (GARCH-M) and exponential GARCH (EGARCH) models. The selection of these two models was motivated by the conclusions and findings of previous related studies, the fact that the financial risk and the expected returns are associated, and then, in the mean equation of the GARCH models, there should be a reference to variance. Within the GARCH-M model, the restricted tool which is conditional and a variety of the stock rate of returns are presumed to be impacted by the past rate of returns and volatility based on the availability of the information at a specific point of time. So, it presents a new expression to test the correlation between volatility and return as the model relates the conditional mean of the return to the conditional variance. On the other hand, one of the interesting features of the financial asset price is that the impact of news badly reported on the instability may be more than the impact of good news. The volatility tends to be directly proportional to the returns, a phenomenon called the leverage effect. The leverage effect is captured by the EGARCH model which was proposed by Nelson [17]. The authors concluded that GARCH-M and EGARCH are the best models to model financial assets. This paper is addressing the problem of the validity of the risk and return trade-off in the investment in stock markets as there is no agreement on this relationship[18, 19]. So, the current paper aims to test the association between risk and return in the Iraqi stock market to contribute to the updates of the nature of the relationship between the two variables so that it can support the investors in their financial decision making. This piece of writing has been designed to include the next sections as follows: in section 2, there will be a brief literature review connected to this work. Section 3 dedicated to the data and the methodology employed, section 4 will illustrate the findings of the study while section 5 will be the conclusion.

2. Literature review

Despite being studied by many works, the findings related to the connection between return and risk in the marketplaces are still ambiguous and have not provided any information about this relationship over time. While some studies suggest a weak or negative relationship, Campbell (1987) found there is a significantly negative relationship. also reached the same results by the use of GARCH models in the CRSP value-weighted Index[20]. The empirical results of the Whitelaw study brought into doubt the value and validity of the relation amongst projected returns and volatility (risk) at the market level[21]. The findings reached by Lee showed a significant negative relationship in their study that applied in two stock markets in China[22]. However, such relationship was tested by [23] in nine Asian as well as in US stock markets. Girard and colleagues performed that before, during and after the Asian financial crisis. They found no significant positive relationship between risk and return. In addition, they found that the relationship tends to positive during the upstate and it becomes negative during the downstate. According to [24, 25] , both negative and positive correlation depend on the methodology used in the examination of the relationship . Baillie & DeGennaro (1990) found little evidence to prove the significant association between stock rate of returns and risk in the U.S. by the use of GARCH (1,1)-M. according to Floros , who used GARCH models for daily data in Egypt and Israel, it is not necessarily that intensify threat could result in an increase in the returns. Panait & Slavescu (2012) used GARCH-M in seven Romanian firm corporations traded on the Bucharest Stock Exchange and three market indexes, during 1997-2012. They found that GARCH-M failed to confirm the theoretical hypothesis which a rise in instability generates an upturn in future proceeds. When applied the EGARCH-M model, Li et al.tested the connection under investigation in 12 global stock markets. Although they found a positive relationship, it was insignificant for the most markets. Contradictory, there was some evidence of a significant negative relationship in 6 markets by the use of a flexible semi-parametric specification of the conditional variance. Islam utilized GARCH models to evaluate and guess the instability of the stock returns of three markets from Asia namely; Jakarta Stock Exchange Composite Index (JKSE) of Indonesia, Kuala Lumpur Composite Index (KLCI) of Malaysia, and Straits Times Index (STI) of Singapore. Two symmetric GARCH models such as the GARCH (1, 1) and GARCH-M (1,1) were applied in this study, and the study covers the daily observations over the period 02/01/2007 – 31/12/2012. The results of the risk-return hypothesis tested in the GARCH-M model, the study detected proofs of a positive relationship among the return and risks for all markets as expected. On the other hand, only for (JKSE) that was found to be more volatile (risker) than the other two stock markets as the estimation of the risk premium coefficient showed to be significant meaning that the rise in risk cause an increase in the stock returns. While the coefficients of premium risk for the other two stock markets are positive but immaterial suggesting that a rise in the risk does not certainly compensate by a higher return. Similarly, Dangi concluded that there is no evidence of the significant return-risk relationship in Bombay Stock Exchange, Bankex index and CNX Bank for the period of January 2004 to September 2015. The study used daily prices and applied GARCH-M and EGARCH models. This study also found that the effect of good news is less as compared to the bad news. On the contrary, many studies have shown a positive relationship between risk and returns. For example, Mougoué & Whyte (1996) in French and German equity markets used GARCH (1,1) and suggested such a positive relationship in both markets. Dean & Faff (2001) concluded a significant positive connection among the risks premium and variance in Australian stock market by the use of EGARCH (1,1)-M.

Song et al. (1998) used GARCH-M to test the connection among risk and returns in the two Chinese stock marketplaces; Shanghai and Shenzhen. The results indicated a substantial connection that suggests that higher risks result in higher returns. Salman (2002) also found there is a positive connection between stock return and the conditional standard deviation by using GARCH-M in Turkey Stock Market (ISE). The positive risk-return relationship was supported also by Bali & Peng (2006) who examined this relationship by the use of GARCH-M for the daily returns of S&P 500 index. Their study concluded to a positive significant correlation between the conditional volatility and the conditional mean of market returns at a daily level. Similarly, the empirical results of Ahmed & Suliman (2011), that applied GARCH Models in Khartoum Stock Exchange, showed high persistence of conditional variance process and risk-premium for the KSE index return series. These data are a good evidence that the positive association hypothesis between the expected stock returns and volatility is existed. The study of Almahadin & Tuna (2016), also supported the major positive connection between risk and return. The study applied GARCH-in Mean model in Jordanian Stock Market. The sample includes the stocks of thirteen conventional banks from Amman stock exchange (ASE), the general index (G-Index), financial sector index (F-Index) and banking sector index (B-Index). Obviously, the results and conclusions of the previous studies are mixed and motivating to conduct more attempts to analyze risk-return relationship. So, the present paper is a new attempt to apply GARCH models in the Iraqi Stock Exchange (ISE).

3. Methodology

3.1. Data and basic statistics

This study employs the closing prices of six banks that are traded in the Iraqi Stock Exchange (ISE60) index. The data series runs from the 1st Jan 2015 to 31 Dec 2017, resulting in a total of 3706 observations excluding public holidays and non-trading days. These closing prices were provided as a courtesy from the Public Relations Section of ISE. It is necessary to mention that the methodology of calculation of the ISE index was frequently changed since the establishment of ISE. So, this is the reason for selecting the banks' stock prices instead of the ISE60 Index price. The second reason for selecting the six banks is that they are of the most liquid companies and permanently traded during the sample period in ISE (the list with their name, market symbol, and the number of observations for each bank is presented in Table 1 at the end of this article). The returns R_t of the stock prices were calculated as the logarithm of the daily changes in the values of the stock price. The following expression is the formula used in this paper[26]:

$$R_t = Log\ (P_t/P_{t-1}) \qquad (3)$$

where P_t and P_{t-1} are the closing stock prices of the current day and the previous day, respectively.

Table 1. The list of the sample

Name of the bank	Bank Code	No. of Observations
Commercial Bank	BCOI	635
Baghdad Bank	BBOB	673
Babylon Bank	BBAY	564
Al-Khalij Bank	BGUC	644
Mosul Bank	BMFI	601
Bank Al-Mansour	BMNS	589
Total Observation		**3706**

3.2. Testing for data stationery

Augmented Dicky-Fuller (ADF) was used to check whether the daily return series of stock prices are stationary (Dickey & Fuller, 1981).

3.3. Testing for ARCH effect

Recent studies have shown that the assumption regarding the variance of the errors in the linear structural model is constant over time is not applicable in the stock prices and stock market indices. According to these studies, the errors exhibit time-varying heteroscedasticity in the financial markets. So, before the use of models GARCH, it is important for examining the evidence of ARCH impacts in the rest. Two steps were performed to test the effect. Firstly, the study considered the Autoregressive (AR) process for the stock are of returns series as:

$r_t = \beta_0 + \beta_1\, r_{t-1} + u_t$ (4)

Then, we applied the Ordinary Least Square (OLS) regression to obtain the residuals. The second step is regressing the squared residuals obtained on a constant and (q) lags in the following expression:

$\sigma^2 = \alpha_0 + \alpha_1 u^2_{t-1} + \alpha_2 u^2_{t-2} + \dots\dots\dots + \alpha_q u^2_{t-q}$ (5)

where q is the number of autoregressive terms in the equation.

The null hypothesis of there is no ARCH effect is:

$H_0 : \alpha_1 = \alpha_2 = \dots\dots = \alpha_q = 0$

is against the alternative hypothesis:

$H_1 : \alpha_1 \neq 0,\ \ \alpha_2 \neq\ 0,\ \dots\dots\ \ \alpha_q \neq 0$

3.4. GARCH-M model

The symmetric model of GARCH-M was advanced by Engle et al. (1987) then used in this study. It is an extended version of the simple GARCH model where the stipulated mean of a series is reliant on on its variance that could be conditional. GARCH-M model is widely used by research and study of financial markets to assess the risk-return tradeoffs as the conditional volatility generating a premium risk; which is an element of the projected return. The expression of the GARCH-M model is:

Mean equation $r_t = \mu + \lambda\sigma^2_t + \varepsilon_t$ (6)

Variance equation $\sigma^2_t = \omega + \alpha\, \varepsilon^2_{t-1} + \beta\, \sigma^2_{t-1}$ (7)

In the mean equation, λ represents a parameter of the premium threat. If the λ is significantly positive, it means that there could be a positive association between the rate of takings and its instability. As a result, there will be a rise in the returns rate in response to the increment in the risk level. According to Robins, Engle, and Lilien, it was assumed such the premium threat is an ε_t; i.e the conditional variance of returns is directly proportional to the reimbursement required to prompt the agent to grasp the advantage.

3.5. EGARCH model

Since the symmetric GARCH-M model cannot interpret the leverage effects observed in the stock rate of returns. Therefore, it is necessary to apply the EGARCH model, firstly to capture the asymmetric responses for a time-varying variance to shocks and, and secondly to guarantees that the variance is always positive. Equation 8 below shows the expression for the conditional variance in the EGARCH model.

$$Ln(\sigma^2_t) = \omega + \beta_1\, Ln(\sigma^2_{t-1}) + \alpha_1 \left\{ \left| \frac{\varepsilon_{t-1}}{\sigma_{t-1}} \right| - \sqrt{\frac{\varepsilon_{t-1}}{\pi}} \right\} - \gamma\, \frac{\varepsilon_{t-1}}{\sigma_{t-1}} \quad (8)$$

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γ measures the leverage effect. So, if the value of $\gamma = 0$, it means that the model is symmetric. In case $\gamma < 0$ means positive shocks cause less volatility than negative shocks. When $\gamma > 0$, it implies that positive innovations are more destabilizing than negative innovations. In finance, the negative shocks usually imply bad news, causing a more uncertain future (risk). Consequently, the stockholders require higher expected returns as compensation for accepting the risk in their investments.

4. Empirical results and discussions

The description of the basic statistics of the daily returns of the sample was calculated and presented in Table 2. As shown in Table 2, the average return for the sample period is negative. It can also be noted that the returns for BMNS were the least scattered (lowest Std. Dev.), while the mean (returns) for the BBAY were the highest scattered (highest Std. Dev.). BMNS is less volatile than other banks of the sample, while BBAY is the highest volatile. Table 2 illustrates that the results of the skewness of the return series are a mix. They are negative for BBOB and BGUC which means that the returns distribution of the stocks has a higher probability of getting negative returns. On the other hand, the skewness of the returns series for BCOI, BBAY, BMFI, and BMNS are positive which suggests that the return distribution of the stocks has an extreme possibility of gaining returns positively. The results of the kurtosis were found to be greater than 3, which indicates that the rate of returns follows a non-normal distribution with fat tails and sharp peaks. The time series of the returns failed to conform to the normal distribution according to the Jarque-Bera statistics test. So, it discards the nullified hypothesis of the customary dissemination of the return series for the sample, except BBAY which its time series follows a normal distribution.

Table 2. The descriptive statistics for the daily return series of the sample of Iraqi banks

Statistics	Baghdad bank	Commercial bank	Mosul bank	Al-Khalij bank	Babylon bank	Al-Mansour bank
Mean	-0.001347	-0.000371	-0.000242	-0.001264	-0.000510	-8.39E-05
Median	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Maximum	0.093526	0.093090	0.095310	0.095310	0.095310	0.089612
Minimum	-0.112117	-0.105361	-0.105361	-0.171850	-0.133531	-0.084899
Std. Dev.	0.023571	0.027542	0.035468	0.026167	0.036899	0.022251
Skewness	-0.170875	0.153097	0.118433	-0.007259	0.055822	0.440935
Kurtosis	6.877928	4.783874	3.572781	7.482079	3.387938	5.391172
Jarque-Bera	424.9748	86.67646	9.620604	539.0614	3.829558	159.4079
Probability	0.000000	0.000000	0.008145	0.000000	0.147374	0.000000

To check whether the returns times series are stationary, the test of Augmented Dickey-Fuller (ADF) was applied and our data showed, as shown in Table 3, that the stationary series for all returns of the targeted banks in the research, hence it allows agreeing the zero postulate of a root unit at entire levels which are of predictable importance for all returns time sequences of the banks.

Table 3. The test of augmented Dickey-Fuller

Bank		t-Statistic	Prob.*
Baghdad bank	Augmented Dickey-Fuller test statistic	-22.42579	0.0000
	1% level	-3.439852	
	5% level	-2.865624	
	10% level	-2.569002	
Commercial bank	Augmented Dickey-Fuller test statistic	-21.98568	0.0000
	1% level	-3.440435	
	5% level	-2.865881	
	10% level	-2.569140	
Mosul bank	Augmented Dickey-Fuller test statistic	-15.07691	0.0000
	1% level	-3.441167	
	5% level	-2.866204	
	10% level	-2.569313	
Al-Khalij bank	Augmented Dickey-Fuller test statistic	-23.48895	0.0000
	1% level	-3.440291	
	5% level	-2.865817	
	10% level	-2.569106	
Babylon bank	Augmented Dickey-Fuller test statistic	-12.50159	0.0000
	1% level	-3.442032	
	5% level	-2.866585	
	10% level	-2.569517	
Al-Mansour bank	Augmented Dickey-Fuller test statistic	-24.66164	0.0000
	1% level	-3.441242	
	5% level	-2.866237	
	10% level	-2.569330	

*MacKinnon (1996) one-sided p-values.

It can be seen that the graphs in Figure 1 which represent the daily return series exhibits the presence of clear clustering at different periods for the returns time series of the banks, which reflects the presence of variance heterogeneity problem, knowing that it is not possible to rely completely on the figure to determine the problem of the presence or absence of variance heterogeneity problem without checking the results depending on the ARCH test.

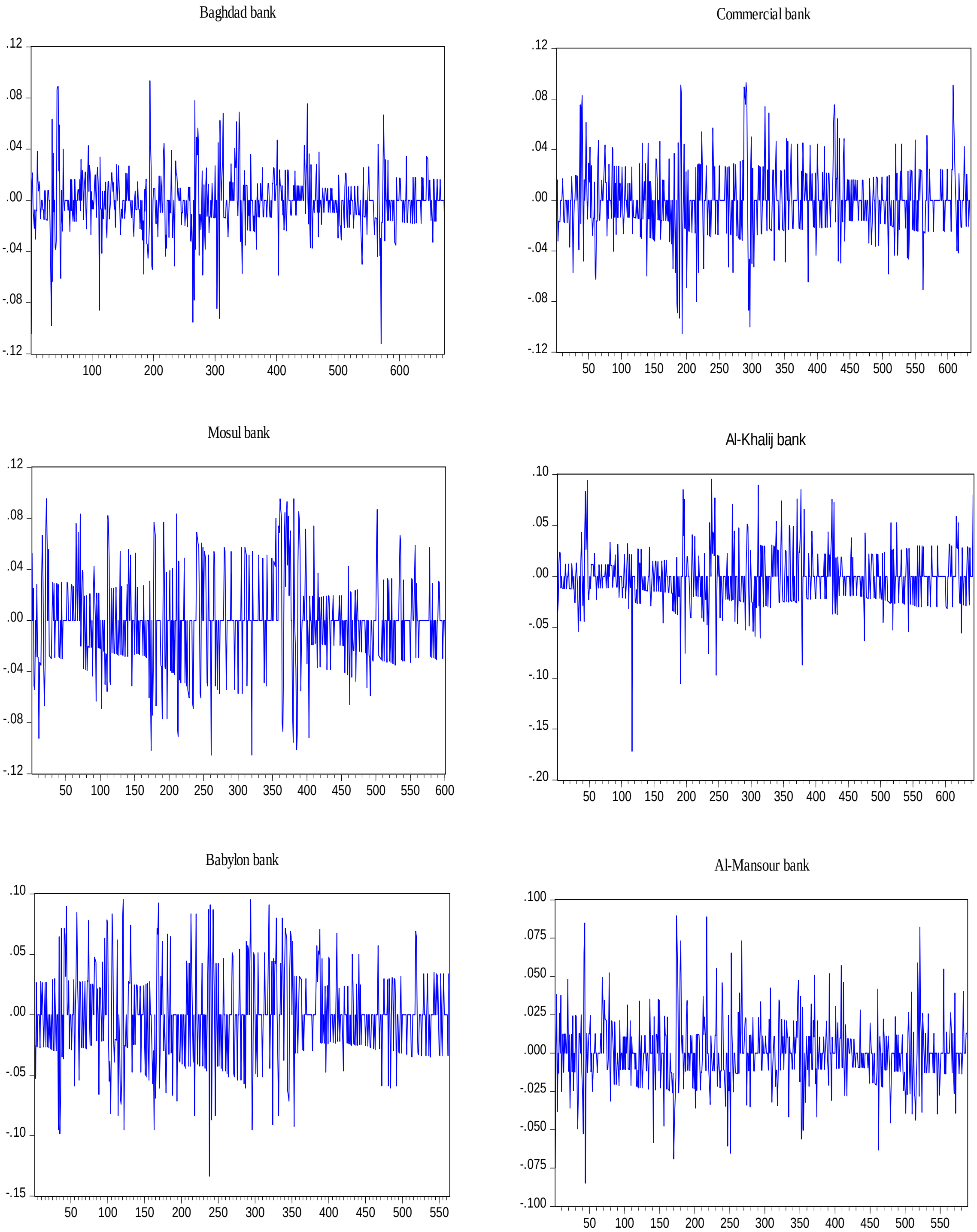

Figure 1. Daily return series of the sample of Iraqi banks

As shown in Table 4, a lag period of 1 was chosen to test the ARCH effect. The probability value of both F-statistic and Observed R-Squared is less than 0.05 (except BGUC which was excluded from the estimate in the following steps). Accordingly, the null hypothesis is rejected. Rejecting H_0 confirms that the residuals series have an ARCH effect, a situation that can be employed to validate the application of GARCH models to estimate both the conditional returns and conditional variance.

Table 4. ARCH test

Baghdad bank	F	67.58489	Prob. F(1,670)	0.0000
	Obs*R-squared	61.57535	Prob. Chi-Square(1)	0.0000
Commercial bank	F	74.36382	Prob. F(1,632)	0.0000
	Obs*R-squared	66.74558	Prob. Chi-Square(1)	0.0000
Mosul bank	F	66.88692	Prob. F(1,598)	0.0000

	Obs*R-squared	60.35936	Prob. Chi-Square(1)	0.0000
Al-Khalij bank	F	0.202836	Prob. F(1,641)	0.6526
	Obs*R-squared	0.203405	Prob. Chi-Square(1)	0.6520
Babylon bank	F	31.19567	Prob. F(1,561)	0.0000
	Obs*R-squared	29.65770	Prob. Chi-Square(1)	0.0000
Al-Mansour bank	F	40.38278	Prob. F(1,586)	0.0000
	Obs*R-squared	37.90825	Prob. Chi-Square(1)	0.0000

To estimate the GARCH-M model, the mean equation of the rate of return time series was allowed to be dependent on the function of the conditional variance. The estimated values for the mean and variance are shown in Table 5. It was shown that the statistical significance of α and β (at 5% and 1% levels) confirms the idea that the sayings on volatility from previous spans can influence the present instability. This is also maintained by the outcomes of the sum of both coefficients. The sums of the coefficients (α and β) are more than (0.76) but less than 1 ($\alpha + \beta < 1$) for the entire sample (except BBAY) which implies the volatility clustering for the returns as shown in Figure 1 above.
Positive values of the λ coefficient for the conditional variance σ^2 in the mean equation for BCOI, BBOB, BBAY, and BMFI were estimated. This means that conditional returns and their conditional variances are positively related. However, the positive estimates of λ are not statistically significant. In other words, for the stocks of the four banks, it seems increased risk may not necessarily be compensated by a rise in expected returns. These results are consistent with Girard et al. (2001), Floros (2008), Li et al. (2005), some results of Islam (2013), and Dangi (2015). Despite being negative, the estimated values of the λ coefficient for BMNS were statistically insignificant which refers to decreased future rate returns on the stocks of BMNS due to increased volatility. To check whether the leverage effect exists in the stock returns of the sample, the coefficients asymmetric EGRACH (1,1) model were estimated with findings mentioned in Table 5. Our findings showed that volatility asymmetric responded to positive and negative shocks as $\gamma \neq 0$ for the entire sample. This means that volatility is affected by the different effects of bad news and good. However, the values of γ were statistically significant (at 5% and 1% levels) with a positive sign for all the stocks of the sample which highlighting the leverage asymmetric responses of the time-varying variance. This means good news generate more volatilities than bad news.

Table 5. Estimates of GARCH-M and EGARCH models

Bank	MODEL	μ	λ	α_0	α_1	β_1	γ
Baghdad bank	GARCH-M (1,1)	-0.002249* (0.0325)	2.678803 (0.2229)	6.23E-05** (0.0000)	0.321380** (0.0000)	0.582288** (0.0000)	-
	EGARCH (1,1)	-0.001798* (0.0162)		-1.577632** (0.0000)	0.494584** (0.0000)	-0.051592 (0.0612)	0.843991** (0.0000)
Commercial bank	GARCH-M (1,1)	-0.002052 (0.2938)	1.461027 (0.6302)	9.44E-05** (0.0004)	0.187624** (0.0000)	0.684989** (0.0000)	-
	EGARCH (1,1)	-0.001136 (0.2337)		-1.366995** (0.0000)	0.334049** (0.0000)	0.048722 (0.1594)	0.846534** (0.0000)
Mosul bank	GARCH-M (1,1)	-0.004059 (0.1683)	2.719579 (0.2967)	6.60E-05** (0.0018)	0.116090** (0.0000)	0.828336** (0.0000)	-
	EGARCH (1,1)	-0.001464 (0.2816)		-0.828100** (0.0000)	0.209693** (0.0000)	0.034432 (0.1715)	0.899868** (0.0000)
Babylon bank	GARCH-M (1,1)	-0.005132 (0.0961)	3.086557 (0.2098)	0.000109** (0.0096)	1.58463** (0.0001)	0.762051** (0.0000)	-
	EGARCH (1,1)	-0.001960 (0.1697)		-1.140044** (0.0004)	0.284522** (0.0000)	0.044415 (0.2598)	0.861063** (0.0000)
Al-Mansour bank	GARCH-M (1,1)	0.000899 (0.6864)	-1.602840 (0.7324)	0.000110** (0.0018)	0.154041** (0.0004)	0.613529** (0.0000)	-
	EGARCH (1,1)	0.000160 (0.8536)		-1.643369** (0.0011)	0.264822** (0.0000)	-0.020670 (0.5320)	0.811370** (0.0000)

* refers to statistically significant differences (5% level).
** refers to statistically significant differences (1% level).

5. Conclusion

One of the most important issues in a variety of applications that are economically and financially attested such as controlling risks, asset pricing, and apportionment of the portfolio is the relationship between volatility of the financial assets and the risk-return. Although many studies and treatises have examined the risk-return tradeoff, they have not reached conclusive findings and results. So, this study is an extension of the previous studies to investigate whether the return is associated with risk by the use of GARCH models that are commonly used in financial markets. The symmetric GARCH-M and the asymmetric EGARCH were used in the most liquid companies and permanently traded at the Iraqi Stock Exchange to assess instability of monetary timely phased series in addition to testing the availability of risk-return tradeoff evident empirically. The key result of applying the GARCH-M model failed to provide convincing evidence to the theoretical positive connection among risk and returns. So, investors may not compensate for a risk premium for bearing additional risk. The results of applying the asymmetric EGARCH showed that the good news is more destabilizing than bad news which means that the stock returns are touchier to the good news than to the bad ones. The findings of the study suggest further studies and applying other GARCH models to reach conclusive evidence regarding the relationship between volatility and return in the financial markets.

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